Application No. 10/705,482
Amdt. Dated 09/29/2004
Reply to Office Action of 06/29/2004

Remarks

Claim 1 has been amended to incorporate the additional step of claim 2, which has been cancelled. Claims 3 and 4 have been amended to depend from amended claim 1. Claims 6 and 7 have been amended to correct erroneous reference to step (g), so that it now reads "enabling step (h)".

Reconsideration of the rejection of Claims 1 and 3 - 7 is respectfully requested in view of the following remarks.

The Examiner has noted that the application names joint inventors. The claims that are currently presented in the application were commonly owned at the time that the inventions covered therein were made.

Summary of applicants' process

The applicants have disclosed a new and unobvious process for coating and inspecting drawn metal parts that is suitable for high speed production of battery cans. The parts are provided in a single ordered stream of parts with a repeating sequential order, such as 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, 3, 4 ---. Referring to Fig. 4 and the process described in detail in paragraphs [0035] through [0039], coating guns A, B, C, D are assigned to the respective locations 1, 3, 4, 2. If gun B becomes inoperative, gun A may be operated at twice the normal firing rate to coat parts 1 and 3, that is, by coating every second can rather than every fourth can. Method 2 described in paragraph [0038] shows how all parts may be coated when two guns become inoperative. This is accomplished by both shifting relative positions of the coating guns and operating them at twice the normal rate.

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Rejections under 35 U. S. C. section 103.

Claims 1 and 2-7 have been rejected under 35 U. S. C. 103(a) as being unpatentable over Pattantyus-Abraham et al (6,325,198), referred to herein as the '198 patent. The '198 patent describes a high-speed manufacturing method for making battery cans. The battery cans are provided in a stream of parts, and it is suggested in Column 32, lines 26 - 48 that a sequence number corresponding to the position of a part in the article stream could be used by a process and station agent to identify arriving articles by keeping account of the transport cleats that have passed the process station. This implies that there is a continuous sequence of numbers rather than a repeating sequential order, as recited in the independent claims 1 and 5. A repeating sequential order is an essential element in the applicants' process and is not shown by the '185 patent.

As illustrated in Figs. 1 and 48 of the '185 patent, a stream of battery cans 34 held between cleats pass a series of processing modules 10 that are each enabled to acquire control of a battery can 34 during the dwell of the indexed motion, to perform least one process on battery can 34 and then return control of battery can 34 to the indexer. The '185 patent also indicates that a typical operation of a module 10 is to apply an internal coating to can 34. This is comparable to the internal coating applied to applicants' battery cans by the coating guns A, B, C, D. Figure 48 of the '185 patent suggests a plurality of identical operation modules 10 receiving parts simultaneously from laterally spaced mounts 82. As explained in column 23, lines 16 - 64, the lateral spacing of mounts 82 correspond to the number of cans to be simultaneously processed and the programmed sequence of dwell periods of belt assembly 68 to ensure that all battery cans are processed. In other words, the plurality of process modules 10 correspond to applicants' plurality of coating guns A - D. However, there is no hint or suggestion as to what happens when one of the process modules 10 of the '185 patent fails or produces defective parts. The applicants recite a step in the process that is not even contemplated or suggested in the '185 patent, that is, enabling a second coating gun to coat drawn metal parts in the same sequential location in the ordered stream that was previously assigned to the first

coating gun if the inspected coating is defective.

Regarding the limitation of dependent claim 3, the '185 patent does not contemplate nor suggest conducting processing in a second module 10 at twice the normal processing rate.

Regarding the limitation of dependent claim 4, the '185 patent does not contemplate shifting the position of a module 10 along the stream of parts, as well as conducting a process in modules 10 at twice the normal processing rate.

Regarding the limitation claim 5 of shutting down coating guns that are producing defective coatings, the '185 patent does not appear to address the problem of inoperative modules 10 or processing of modules 10 to produce defective parts other by rapid removal and installation of process modules requiring replacement to minimize the downtime associated with a malfunctioning processing system to. See Column, 24, lines 15 - 18. Applicants' process continues to run while a defective or inoperative coating gun is removed and replaced with a properly functioning coating gun.

Applicants take strong issue with the Examiner's characterization of the step of providing a plurality of coating guns firing at normal firing rates as evidencing merely a duplication of parts without having any patentable significance. Quite to the contrary, the recitation of a plurality of coating guns creates a new and unexpected result. The recitation is required for reciting the process step of enabling one coating gun to coat parts in the same sequential location in a stream of parts having a repeating sequential order when another one of the guns becomes defective. The new and unexpected result is that the production line continues to function even while the defective or inoperative coating gun is being replaced. This is clearly not present in the '185 patent. The '185 patent simply sets up the problem, which is addressed and solved by the applicants. The '185 patent does not suggest a solution to the problem other than to shut down the line and replace the defective module.

Since the applicants have provided a new and unobvious result and have clearly defined the inventive process in a series of steps which is not shown the reference, reconsideration of

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Claims 1 and 3 - 7, as amended is respectfully requested and it is asked that the case be passed to issue.

Respectfully submitted,

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